What is claimed is:

1. A communication band control system for executing communication band allocation control in a network in which communication bands are previously allocated to one or more users, said communication band control system comprising:

opening means for opening an unused portion of a communication band previously allocated to a certain user, to other users;

acceptance means for accepting use requests of all or a part of the unused portion, from other users; and

allocation alteration means for allocating all or a part of the unused portion that corresponds to use requests, to a different user.

2. A communication band control system according to claim 1, further comprising rent billing means for billing rents to be paid to said certain user, for all or a part of the unused portion allocated temporarily to a different user, by the different user.

3. A communication band control system according to claim 1, further comprising contention processing means, responsive to a contention of use requests from a plurality of other users for the unused portion, for selecting a user having a highest use factor of the unused portion, as the different user to be allocated all or a part of the unused portion.

4. A communication band control system according to claim 3, wherein

36

said contention processing means derives a product of a priority index respectively declared by each of the plurality of other users and a use factor of the unused portion, for each of the other users, and selects a user having a largest product as a different user to be allocated all or a part of the unused portion, and

said billing means bills a rent according to a priority index declared by the selected different user.

5. A communication band control system according to claim 1, wherein

said acceptance means accepts a nonpreferential use request including information which indicates a value of a communication band desired to be allocated within a predetermined time limit, from a user, and

said allocation alteration means allocates unused portions of communication bands opened to public after acceptance of the nonpreferential use request and previously allocated to users except the nonpreferential user who has declared the nonpreferential use request, to the nonpreferential user until a total value of the communication band allocated to the nonpreferential user within the time limit reaches a value desired in the nonpreferential use request.

6. A communication band control system according to claim 3, wherein

said allocation alteration means includes a time limit for insurance of a communication band desired in a use request by an unselected user included in other users who are not selected by said contention processing means,

37

when allocating a part of the unused portion to the different user selected by said contention processing means, said allocation alteration means allocates a remaining part of the unused portion to the unselected user, and

said allocation alteration means allocates unused portions of communication bands opened to public thereafter and previously allocated to users except the nonpreferential user, to the nonpreferential user until a total value of the communication band allocated to the nonpreferential user within the time limit reaches a communication band desired in the use request.

7. A communication band control system according to claim 1, further comprising creation means for creating a virtual matrix having portions obtained by dividing a rectangle which shows an used portion by unit rectangles each having a unit bandwidth and a unit time length, wherein

said opening means opens the unused portion represented by the virtual matrix to public,

said acceptance means accepts a use request of all or a part of the unused portion specified by taking the unit rectangle as unit,

said creation means represents all or a part of the unused portion requested by the different user who is accepted by said acceptance means and determined to be allocated, on the virtual matrix, and

said allocation alteration means allocates all or a part of the unused portion to the different user based on the virtual matrix.

38

8. A communication band control system according to claim 1, wherein

said acceptance means accepts a temporary use request of a communication band which is not previously allocated to a user, and conditions of complying with the use request,

said opening means opens the use request and conditions to other users,

said acceptance means accepts consents to the use request and conditions from other users, and

said allocation alteration means temporarily allocates communication bands previously allocated to other users who have given the consents to the use request and conditions, to the user who has issued the use request.

9. A communication band control system according to claim 1, further comprising fee billing means, responsive to a communication band allocation alteration conducted by said allocation alteration means, for billing at least a user of the alteration destination for a fee.

10. A communication band control system according to claim 1, wherein said opening means opens a situation of a communication band previously allocated to a certain user, to users via Internet in such a state as to reflect the unused portion and a portion for which the use request has been made.

11. A communication band control system for executing communication band allocation control in a network in which communication bands are previously allocated to one or more users, said communication band control system comprising:

acceptance means for accepting a use request containing information indicating a value of a communication band which is not previously allocated to a user and desired to be temporarily allocated within a predetermined time limit, and

allocation alteration means for allocating unused portions of communication bands previously allocated to users except the request user who has requested the use, to the request user, after acceptance of the use request, until a total value of the communication band temporarily allocated to the request user within the time limit reaches a value desired in the use request.

12. A communication band control system for executing communication band allocation control in a network in which communication bands are previously allocated to one or more users, said communication band control system comprising:

acceptance means for accepting a temporary use request of a communication band that is not previously allocated to a user, and conditions of complying with the use request;

opening means for opening the use request and conditions to other users;

allocation alteration means responsive to acceptance of consents to the use request and conditions from other users conducted in said acceptance means, for temporarily allocating communication bands previously allocated to the other users, to the user who has issued the use request.

13. A communication band control method for executing communication band allocation control in a network in which communication bands are previously allocated to one or more users,

said communication band control method comprising:

an opening step for opening an unused portion of a communication band previously allocated to a certain user, to other users;

an acceptance step for accepting use requests of all or a part of the unused portion, from other users; and

an allocation alteration step for allocating all or a part of the unused portion that corresponds to use requests, to a different user.

14. A communication band control method according to claim 13, further comprising a rent billing step for billing rents to be paid to said certain user, for all or a part of the unused portion allocated temporarily to a different user, by the different user.

15. A communication band control method according to claim 13, further comprising a contention processing step, responsive to a contention of use requests from a plurality of other users for the unused portion, for selecting a user having a highest use factor of the unused portion, as the different user to be allocated all or a part of the unused portion.

16. A communication band control method according to claim 15, wherein

said contention processing step derives a product of a priority index and a use factor of the unused portion declared by each of the plurality of other users, for each of the other users, and selects a user having a largest product as a different user to be allocated all or a part of the unused portion, and

41

said billing step bills a rent according to a priority index declared by the selected different user.

17. A communication band control method according to claim 13, wherein

said acceptance step accepts a nonpreferential use request containing information which indicates a value of a communication band desired to be allocated within a predetermined time limit, from a user, and

said allocation alteration step allocates unused portions of communication bands opened to public after acceptance of the nonpreferential use request and previously allocated to users except the nonpreferential user who has declared the nonpreferential use request, to the nonpreferential user until a total value of the communication band allocated to the nonpreferential user within the time limit reaches a value desired in the nonpreferential use request.

18. A communication band control method according to claim 15, wherein

said allocation alteration step contains a time limit for insurance of a communication band desired in a use request by an unselected user included in other users who are not selected by said contention processing step,

when allocating a part of the unused portion to the different user selected by said contention processing step, said allocation alteration step allocates a remaining part of the unused portion to the unselected user, and

said allocation alteration step allocates unused portions of communication bands opened to public thereafter and previously

42

allocated to users except the nonpreferential user, to the
nonpreferential user until a total value of the communication
band allocated to the nonpreferential user within the time limit
reaches a communication band desired in the use request.

19. A communication band control method according to claim
13, further comprising a creation step for creating a virtual
matrix having portions obtained by dividing a rectangle which
shows an used portion by unit rectangles each having a unit
bandwidth and a unit time length, wherein

said opening step opens the unused portion represented
by the virtual matrix to public,

said acceptance step accepts a use request of all or a
part of the unused portion specified by taking the unit rectangle
as unit,

said creation step represents all or a part of the unused
portion requested by the different user who is accepted by said
acceptance step and determined to be allocated, on the virtual
matrix, and

said allocation alteration step allocates all or a part
of the unused portion to the different user based on the virtual
matrix.

20. A communication band control method according to claim
13, wherein

said acceptance step accepts a temporary use request of
a communication band which is not previously allocated to a user,
and conditions of complying with the use request,

said opening step opens the use request and conditions
to other users,

said acceptance step accepts consents to the use request

43

and conditions from other users, and

said allocation alteration step temporarily allocates communication bands previously allocated to other users who have given the consents to the use request and conditions, to the user who has issued the use request.

21. A communication band control method according to claim 13, further comprising a fee billing step, responsive to a communication band allocation alteration conducted by said allocation alteration step, for billing at least a user of the alteration destination for a fee.

22. A communication band control method according to claim 13, wherein said opening step opens a situation of a communication band previously allocated to a certain user, to users via Internet in such a state as to reflect the unused portion and a portion for which the use request has been made.

23. A communication band control method for executing communication band allocation control in a network in which communication bands are previously allocated to one or more users, said communication band control method comprising:

an acceptance step for accepting a use request containing information indicating a value of a communication band which is not previously allocated to a user and desired to be temporarily allocated within a predetermined time limit, and

an allocation alteration step for allocating unused portions of communication bands previously allocated to users except the request user who has requested the use, to the request user, after acceptance of the use request, until a total value

44

of the communication band temporarily allocated to the request
user within the time limit reaches a value desired in the use
request.

24. A communication band control method for executing
communication band allocation control in a network in which
communication bands are previously allocated to one or more users,
said communication band control method comprising:

an acceptance step for accepting a temporary use request
of a communication band that is not previously allocated to a
user, and conditions of complying with the use request;

an opening step for opening the use request and conditions
to other users;

an allocation alteration step responsive to acceptance
of consents to the use request and conditions from other users
conducted in said acceptance step, for temporarily allocating
communication bands previously allocated to the other users,
to the user who has issued the use request.